

March 28, 1961

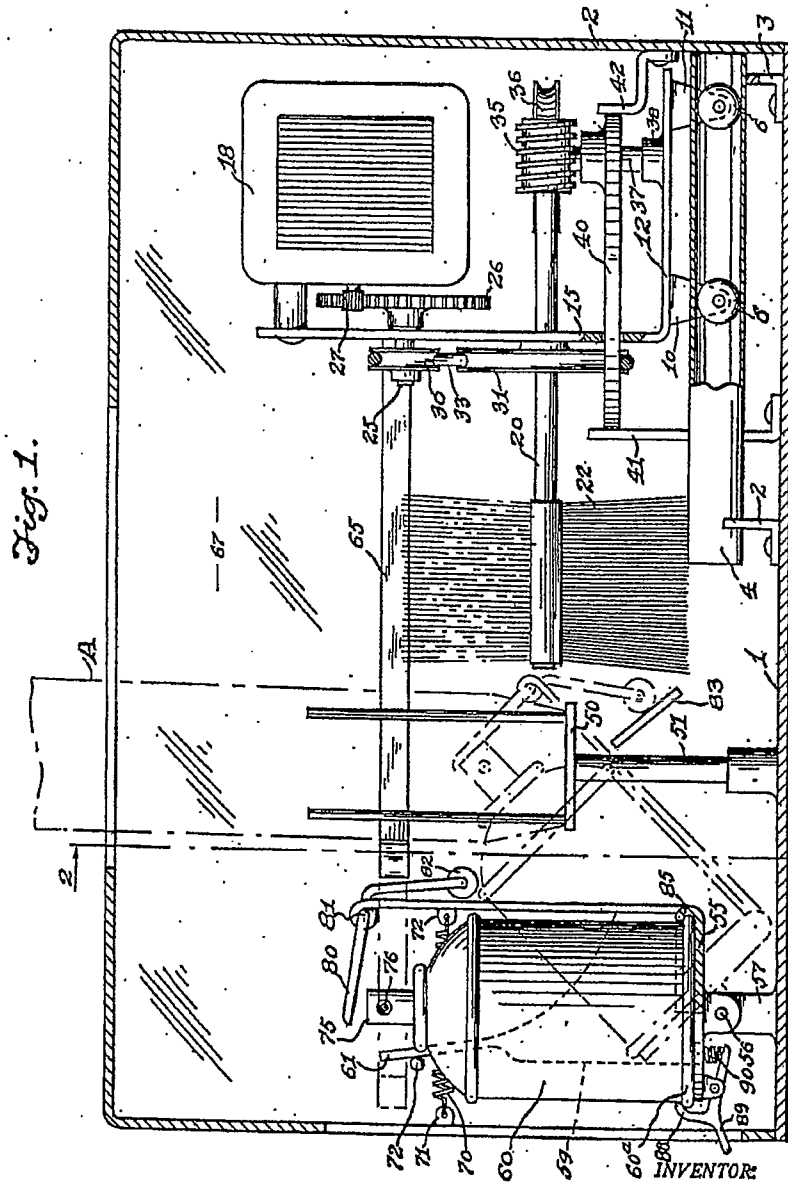
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2,976,552

HAIR CLIPPER CLEANING AND STERILIZING DEVICE

Filed Nov. 12, 1957

2 Sheets-Sheet 1



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EXHIBIT Q

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Fig. 2.

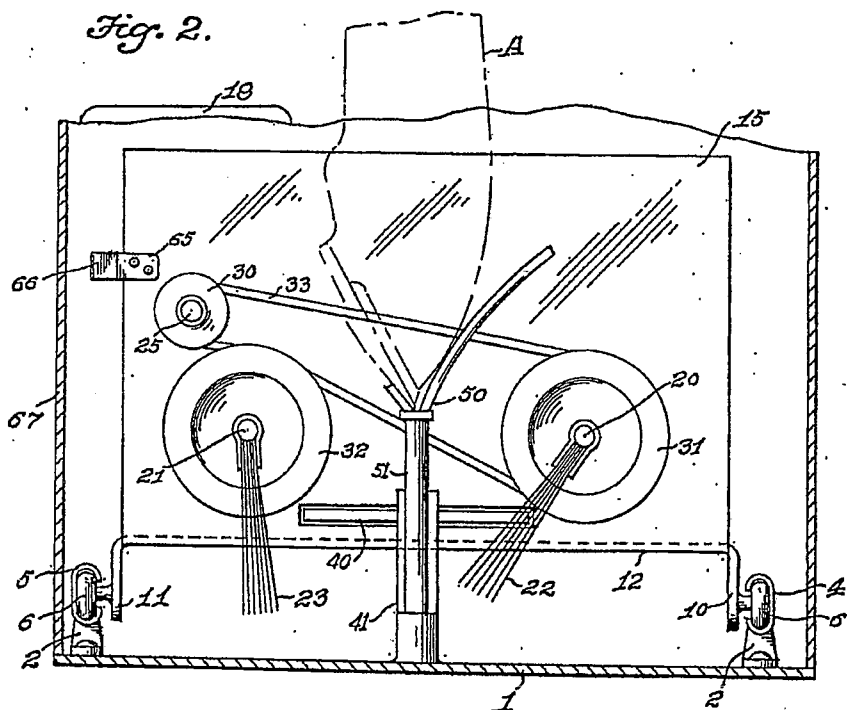


Fig. 3.

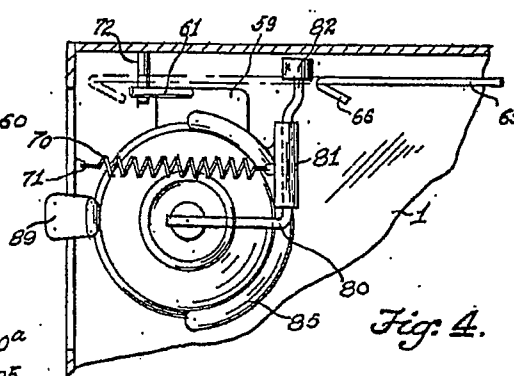
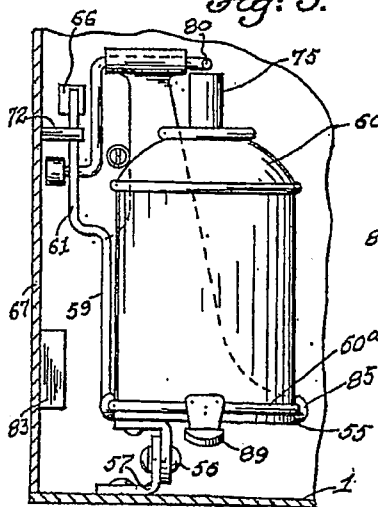


Fig. 4.

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HAIR CLIPPER CLEANING AND STERILIZING DEVICE

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7 Claims. (Cl. 15—21)

This invention relates to a device for cleaning and sterilizing electric hair clippers such as used in the home and in the barber shop at the present time. A device of this type is described in Patent No. 2,788,536 issued to me on April 16, 1957.

It is, particularly in barber shops, essential that the hair clipper be cleaned and sterilized each time it has been used. This throws on the barbers of the shop the burden of manually cleaning and sterilizing the clipper each time he is through using it. But where, in most busy barber shops, people are waiting to be served, it is generally not possible for the barbers to take time effectively to do the cleansing and sterilizing. This is particularly the case where the same electric clipper is used by more than one barber and the individual barbers are pressed for time.

It is the object of the present invention to provide a simple and efficient, power driven device which will thoroughly cleanse and sterilize the head of an electric hair clipper in a few seconds by merely placing the clipper in position in the device and by pressing a button to close the circuit through the electrically operated device.

It is in order to do the cleaning thoroughly necessary to apply a suitable sterilizing fluid to the clipper each time it has been used. To do this is also time consuming besides depending upon the carefulness of the time crowded barber. It is, in view of this, the further object of the invention to provide means for automatically applying a suitable sterilizing fluid to the head of the clipper each time it is cleansed in the device. Such fluid is generally placed on the market in small cans having a cap which is manually depressible to apply a spray of the fluid to the clipper head. Means must be provided for placing such can in position within the device and automatically to depress the cap to effect the spraying during each cleansing operation. Such means is also shown in my said patent.

It is, however, found that the sterilizing fluid in such small cans quickly becomes exhausted, rendering it necessary quite often to replenish the fluid supply. It is for this reason a further object of the invention to provide simple and conveniently operable means for placing a sterilizer can in the device and for removing and replacing the can.

With these and other objects in view, the invention, consists in the combinations hereinafter fully described and drawings are hereto appended in which preferred forms of the invention are illustrated.

In the drawings:

Fig. 1 is a side elevational view of a device embodying the invention and with the front wall thereof broken away for the sake of clearness;

Fig. 2 is a corresponding end view taken substantially on line 2—2 of Fig. 1 in the direction of the arrows;

Fig. 3 is a fragmentary corner view at one end of the device showing the manner in which the sprayer can is mountable and operable; and

Fig. 4 is a substantially corresponding plan view of the device of Fig. 3.

As illustrated in the drawings, the devices of the inven-

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tion are mounted on a base plate 1. Brackets 2, 3 rise from the base plate to support channeled guides 4, 5 which are of a size to receive therein rollers or wheels 6. These rollers are seated for rotation in lugs 10, 11 of a platform 12 from one end of which a wall 15 extends vertically to support an electric motor 18; all substantially as illustrated in the drawings.

Two horizontally aligned shafts 20, 21 are seated for rotation in this wall to support brushes 22, 23. A stub shaft 25 is mounted for rotation in the wall above and behind the two shafts and this shaft is by suitable speed reducing gearing 26, 27 connected for rotation by the motor. A pulley 30 is placed on the inner end of the stub shaft and larger pulleys 31, 32 are mounted on the two shafts in alignment with pulley 30. A belt 33 is thereupon seated in the three pulleys 30-32 and the lower reach of this belt is by the tension of the belt held pressed into the form fitting grooves of the pulleys. When the three shafts and pulleys are correctly proportioned and placed it is found that the motor will rotate the brushes 22, 23 at the proper speed. But sprocket wheels and a chain may be substituted, if preferred.

To the outer end of the shaft 20 is affixed a threaded worm 35 and a worm gear 36 is placed on a vertically directed stub shaft 37 in permanent mesh with this worm. The shaft 37 is seated for rotation in a bearing 38 of the platform 12 and it is at the lower end thereof fitted with a circular cam 40 of a diameter to fit snugly between brackets 41, 42 rising from the base plate and outer wall 2. It is seen from this description that rotation of the brush shaft 21 and worm 35 will operate the cam, in rotating to impart reciprocatory movement to the platform 12.

A cradle 50 is mounted on a post 51 rising from the base plate 1 and this cradle is shaped to receive therein the head of the hair clipper A in the same manner that the clipper is shown supported in my said prior patent. And the rotating brushes will pass over the surfaces of the clipper head in like manner when reciprocated as above described to sweep away all hair which may have accumulated on the clipper head during hair cutting operation. But it is to be noted that a more complete, circular brush may be substituted as indicated in phantom outline in Fig. 1 of the drawings.

As in my said patent, means must be provided to apply a sterilizing fluid to the clipper head at the end of each brush sweeping operation and this may be done in the following manner. A frame 55 is at 56 shown pivotally mounted on a bracket 57 rising from the base plate 1. This frame is shaped and proportioned to receive therein and to support a conventional spraying can 60, containing the sterilizing fluid. A rod 61 rises from the rear wall 59 of the frame and it is upwardly and inwardly extended therefrom at a suitable angle, substantially as indicated in the drawings.

A resilient bar 65 extends inwardly from the vertical wall 15 of the platform 12 and the end of this bar is shown bent back to form a hook 66 which, during the advance movement of the platform and brush assembly, is free to pass over the rod 61 of the sterilizer can frame wall 59. But on the return movement of the brush assembly, it is found that the hook 66 will engage the rod, substantially as indicated in phantom outline in Fig. 4, to tilt the sterilizer frame on its pivot 56 until the hook is free to pass over the upper end of the rod at the end of the brush assembly reciprocation. The frame 55 is now free to return to its initial position and it may for this purpose be fitted with a spring 70, the outer end of which is secured in position on a stud 71 of the inner wall of the housing. A stud 72 of the rear wall 67 will maintain the frame in upright position.

The spraying can 60 is at the top thereof provided

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with a conventional, depressible valve 75 having the usual spray opening 76 at one side thereof. This valve is at the end of the brush assembly return movement depressed by a lever 80 which at 81 is shown mounted for oscillation at the top of the can frame wall 59. On the other end of this lever is placed a roller 82 which normally takes a position a short distance above the bar 65 and it remains undisturbed on the forward movement of the brush assembly. But as the hook 66 of the bar 65, on the return stroke of the assembly, commences to tilt the frame it is found that the frame and lever must follow the tilting movement and, as the tilting movement is continued, that the roller on the outer end of the lever will reach and be moved outwardly on an inclined bracket 83 of the rear wall 67. This causes the valve to be depressed to open the valve to force a powerful spray of disinfectant against the surface of the clipper head until the hook passes beyond the end of the rod 61. The spring 70 will then quickly return the frame to its upright position and instantly close the valve.

In busy barber shops it is found that each barber will use the clipper several times during the daily working hours and it does not take very long before the fluid is exhausted. It is for this reason essential that suitable means be provided for removing and replacing the sterilizer cans. The can frame may for this purpose at the bottom thereof be provided with a semi circular lug 85. This lug is shaped to fit over the bottom bead 60* of the can. When so shaped it is found that the can may be pushed into position within the frame base and held firmly in place by the lug 85. The inner end of the frame bottom must, of course, be left open and a lever 88 is shown pivotally placed on the bottom of the frame to engage the bead of the can to lock the can in position. When the lever is extended to form a finger piece 89, it is seen that it is merely required to depress this finger piece to release the can for removal. A spring 90 will maintain the lever in locking position. But other suitable means for locking the can in position may be substituted, if preferred.

I claim:

1. An electric clipper cleaning and sterilizing device comprising, a casing, a cradle in the casing adapted to receive the head of the clipper, a platform mounted for horizontal reciprocation in the casing, brushes on the platform, means for moving the platform and brushes across the head of the clipper, a frame mounted for tilting movement within the casing, a sprayer can removably seatable in the frame, the can having a depressible valve at the upper end thereof, a member extending from the platform engaging the frame to tilt the frame on the return movement of the platform, and a lever in the frame engaging said member during the tilting movement of the frame to depress and open the can valve.

2. A device as set forth in claim 1 in which means is provided for returning the frame to its initial position.

3. A device as set forth in claim 1 in which manually operable means is provided for locking the can in position within the frame.

4. An electric clipper cleaning and sterilizing device comprising, a base plate, brackets rising from said plate, channelled guides horizontally mounted on said brackets, a platform, rollers on the platform riding in the guides, a cradle on the base plate for receiving the clipper, a resilient bar extending from the platform, the free end

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of the bar being bent back to form a hook, a frame mounted for tilting movement on the base plate, a spraying can seatable therein, the frame having a rod upwardly extending therefrom in the path of movement of the bar, means for reciprocating the platform to cause the hook of the bar to engage the rod on return movement of the platform to tilt the frame, and a lever on the frame engaging the can on return movement of the platform to actuate the can to direct sterilizing fluid against the surface of the clipper.

5. A device as set forth in claim 4 in which means is provided for locking the can in position in the frame, and a manually operable lever for releasing the can for removal.

6. An electric clipper cleaning and sterilizing device which comprises: a casing; cradle means within said casing, said cradle means being adapted to support the head of a clipper within said casing; platform means movably mounted within said casing so as to be capable of being reciprocated toward and away from said cradle means; brush means for cleaning a head of a clipper held within said cradle means, said brush means being mounted rotatably on said platform means; means for reciprocating said platform means within said casing and for rotating said brush means; frame means mounted in said casing adjacent to said cradle means, said frame means being capable of being tilted toward said cradle means; spray means for dispensing sterilizing fluid mounted on said frame means, said spray means including valve means for actuating said spray means; means for tilting said frame means toward said cradle means during movement of said platform means away from said cradle means; and actuating means for engaging said valve means so as to actuate said spray means when said frame means is tilted.

7. An electric clipper cleaning and sterilizing device which comprises: a casing; cradle means mounted within said casing, said cradle means being adapted to support the head of a clipper within said casing; platform means movably mounted within said casing so as to be capable of being reciprocated toward and away from said cradle means; brush means for cleaning a head of a clipper held within said cradle means, said brush means being rotatably mounted on said platform means; means for reciprocating said platform means within said casing and for rotating said brush means; frame means mounted in said casing adjacent to said cradle means, said frame means being capable of being tilted toward said cradle means; spray means for dispensing sterilizing fluid mounted on said frame means, said spray means including valve means for actuating said spray means; means for tilting said frame means toward said cradle means during movement of said platform means away from said cradle means attached to said platform means, said means for tilting being capable of engaging said frame means during movement of said platform means away from said cradle means; and actuating means for engaging said valve means so as to actuate said spray means when said frame means is tilted mounted on said frame means.

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